OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET I of 44

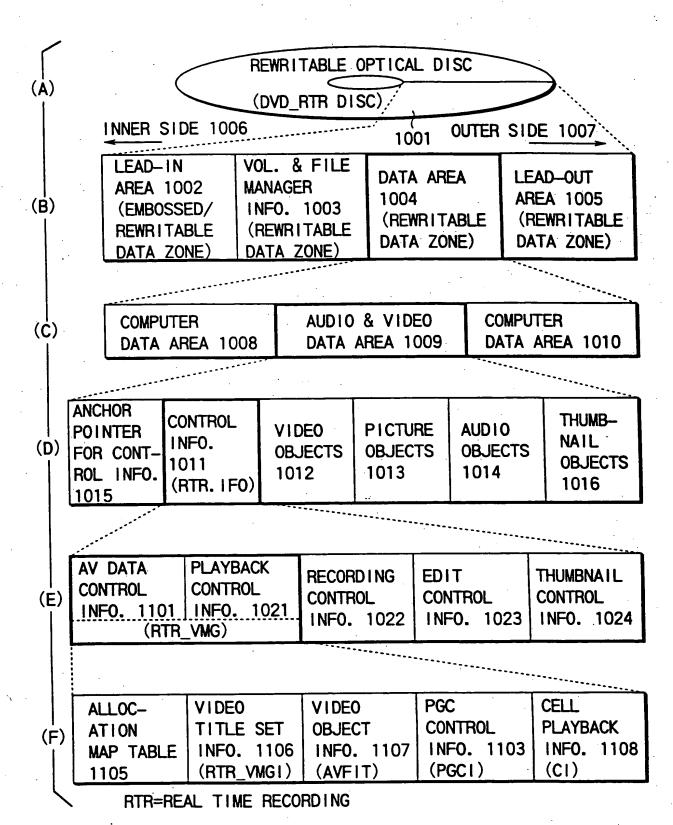


FIG. 1

ROOT DIRECTORY 1450 SUB DIRECTORY 1451 REWRITABLE TITLE SET RW_VTS 1452 (DVD_RTR DIRECTORY) RTR=REAL TIME RECORDING DATA FILES 1453 CONTROL INFORMATION 1011 =RW_VIDEO_CONTROL.IFO (RTR.IFO) BACKUP OF CONTROL INFO. =RW_VIDEO_CONTROL.BUP AV FILE 1401 (RTR DATA) =RW_OBJECT.OB VIDEO OBJECT (RTR_MOV. VRO) 1012 PICTURE OBJECT (RTR_STO. VRO) 1013 AUDIO OBJECT (RTR_STA. VRO) 1014 THUMBNAIL OBJECT 1016 REWRITABLE ADDITIONAL INFO. 1454 =RW_ADD. DAT SUB DIRECTORY 1451 VIDEO TITLE SET VIDEO_TS (OR VTS) 1455 AUDIO TITLE SET AUDIO_TS (OR ATS) 1456

FIG. 2

SUB DIRECTORY FOR COMPUTER DATA STORAGE 1457

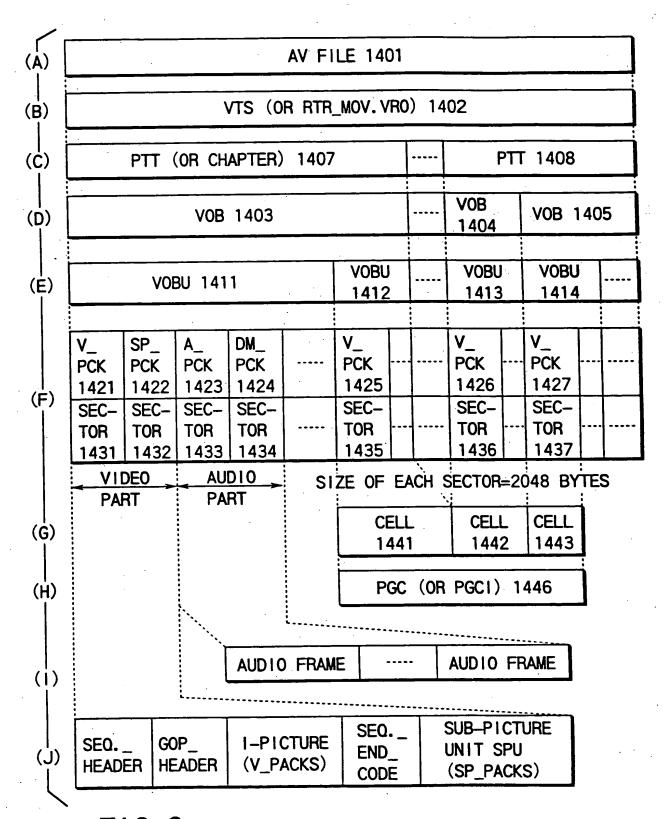


FIG. 3

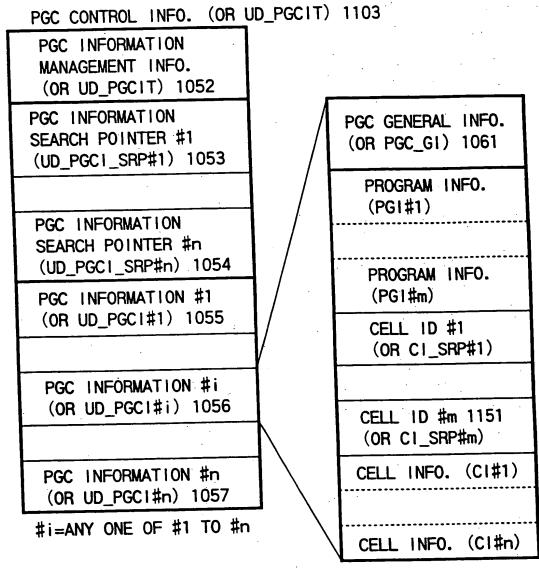
	8	1	LSNg
	3) #(3)	EXTENT # £ 1475	
	>	ω	LSNf+1
	DED	-	LSNf
	AREA 1460	EXTENT # \$ 1470	
	UNB		LSNe+1
	2	1-	LSNe
	VOB #2 1462	EXTENT # /8 1472	
0	>	u 	LSNd+1
AV FILE 1401	3	<u>_</u>	LSNd
FIL	08 # (2) 1464	EXTENT # S 1474	
⋛	>	Ш	LSNc+1
			LSNc
	VOB #1 1461	ENT 27	
	V0B #1	EXTENT # \$\pi\$ 1471	LSNb+2
			LSNb+1
			LSNb
	/08 #3 (1) 1463	2 ENT	
	VOB #3 (1) 1463	EXTENT # 7 1473	LSNa+2
			LSNa+1

←SMALLER LOGICAL SECTOR NUMBER (LSN) ←INNER SIDE OF OPTICAL DISC 1001

LARGER LOGICAL SECTOR NUMBER (LSN)→ OUTER SIDE OF OPTICAL DISC 1001→

F16.4

CONTENTS OF	NUMBER OF EXTENTS IN UNRECORDED AREA 1601	. 1
ALLOCATION MAP TABLE 1105	1ST ADR. (LSN) OF 1ST EXTENT IN UNRECORDED AREA 1606	e-a
DISTRIBUTION INFORMATION OF	SIZE (SECTORS) OF 1ST EXTENT IN UNRECORDED AREA 1614	f-e
POSITIONS OF UNRECORDED AREA 1621	NUMBER OF EXTENTS IN VOB #1 1602	1
DISTRIBUTION	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #1 1607	b-a
INFORMATION OF POSITIONS OF	SIZE (SECTORS) OF 1ST EXTENT IN VOB #1 1615	c–b
RECORDED DATA AS TO VOB #1	NUMBER OF EXTENTS IN VOB #2 1603	1
DISTRIBUTION	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #2 1608	d–a
INFORMATION OF POSITIONS OF	SIZE (SECTORS) OF 1ST EXTENT IN VOB #2 1616	e–d
RECORDED DATA AS TO VOB #2	NUMBER OF EXTENTS IN VOB #3 1604	3
DISTRIBUTION	1ST ADR. (LSN) OF 1ST EXTENT IN VOB #3 1609	1
INFORMATION OF POSITIONS OF RECORDED DATA	SIZE (SECTORS) OF 1ST EXTENT IN VOB #3 1617	b-a
AS TO VOB #3	1ST ADR. (LSN) OF 2ND EXTENT IN VOB #3 1610	с–а
	SIZE (SECTORS) OF 2ND EXTENT IN VOB #3 1618	d-c
	1ST ADR. (LSN) OF 3RD EXTENT IN VOB #3 1611	f–a
	SIZE (SECTORS) OF 3RD EXTENT IN VOB #3 1619	g–f
FIG.5		<u> </u>



*1> PGC INFORMATION (OR UD_PGCI) CAN DEFINE A GROUP OF ONE OR MORE PROGRAMS;

^{*2&}gt; EACH PROGRAM CAN BE FORMED OF ONE OR MORE CELLS;

^{*3&}gt; EACH CELL CAN BE SPECIFIED BY CELL ID (OR CI_SRP);

^{*4&}gt; EACH CELL ID (OR CI_SRP) CAN INDICATE POSITION (OR START ADDRESS) OF CELL INFORMATION (OR CI);

^{*5&}gt; EACH CELL INFORMATION (OR CI) CAN DETERMINE START TIME AND END TIME OF PRESENTATION OF CELL

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 7 of 44

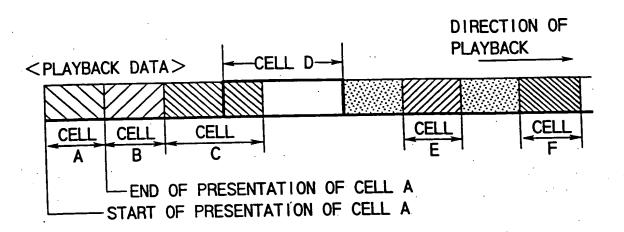


FIG. 7A

PGC INFORMATION (PGCI)

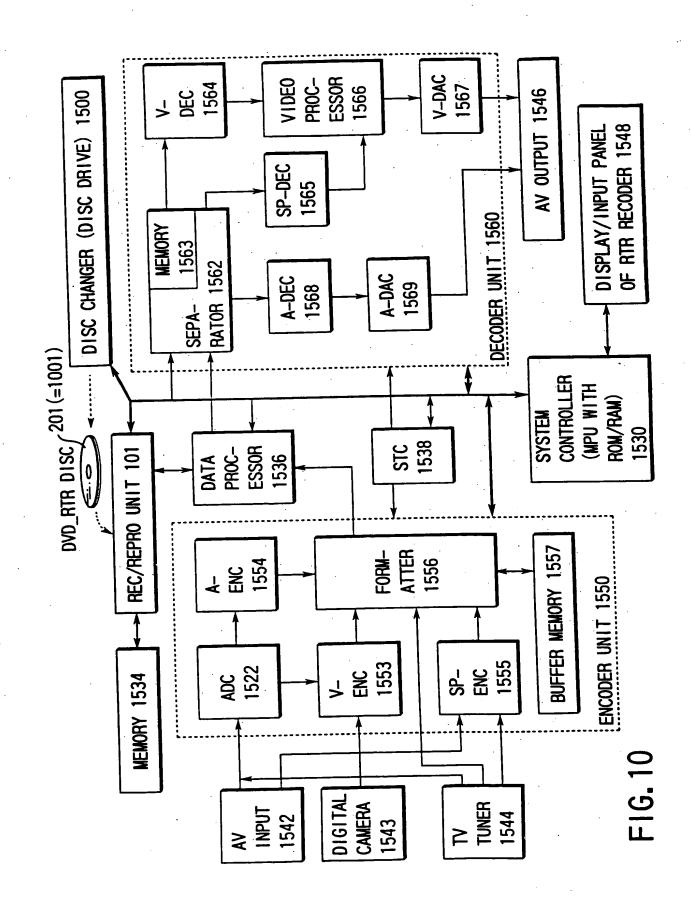
PGC#1	1081	PGC#2	1082	PGC#3	1083
NUMBE CELLS		NUMBE CELLS		NUMBE CELLS	
#1	CELL A	#1	CELL D	#1	CELL E
#2	CELL B	#2	CELL E	#2	CELL A
#3.	CELL C	#3	CELL F	#3	CELL D
		<u> </u>		#4	CELL B
				#5	CELL E
CELL	CELL INFO.	CELL ID	CELL INFO.	CELL ID	CELL INFO.
CI_SRP #m=3	CI #n=3	CI_SRP #m=3	C1 #n=3	CI_SRP #m=5	C1 #n=4

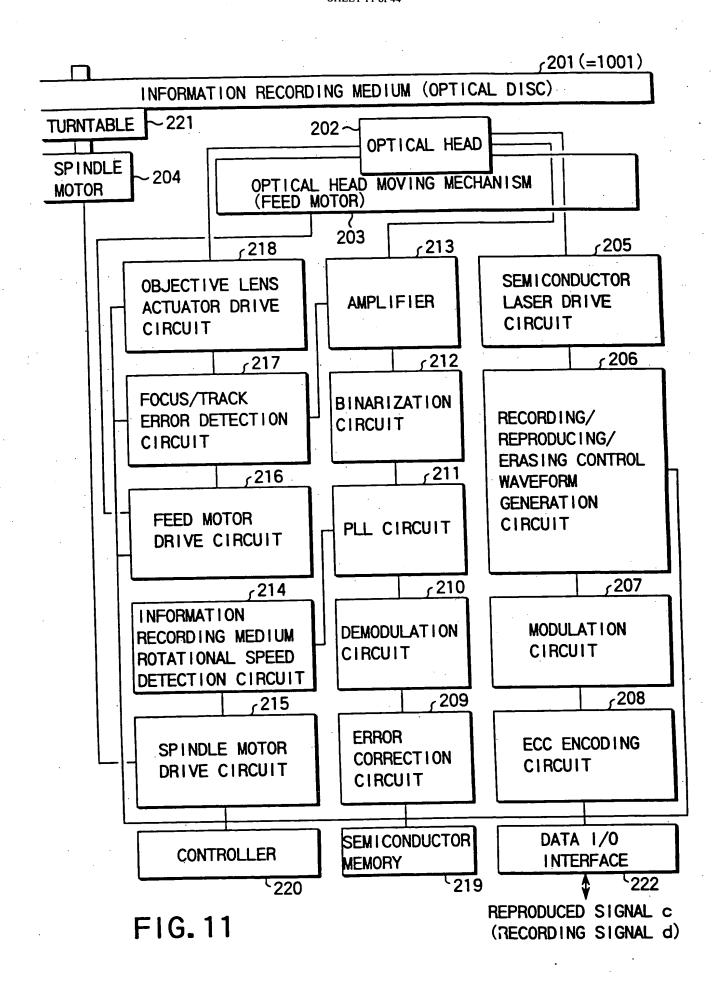
FIG. 7B

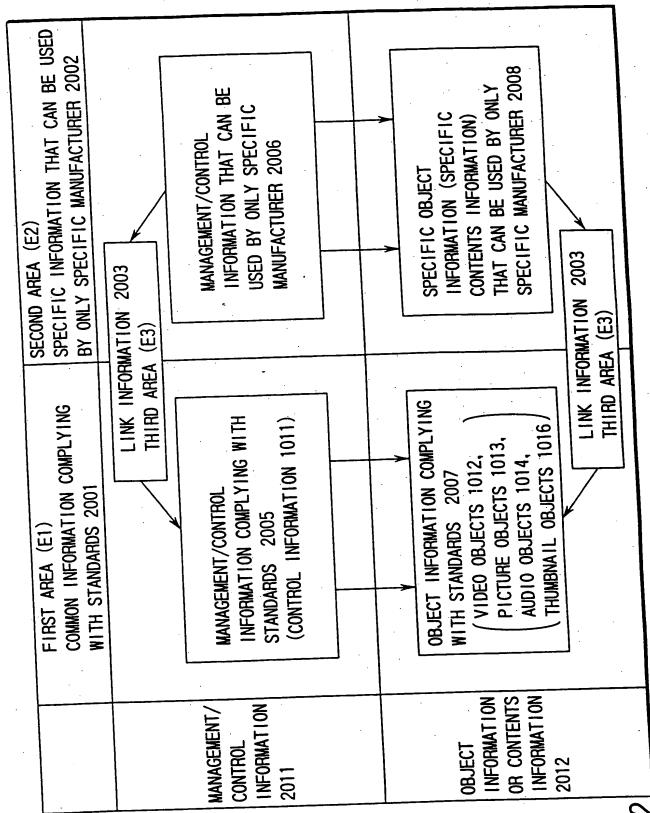
OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 8 of 44

NUMBER OF VOB IN VTS OR PLAY LIST SEARCH POINTER TABLE INFO. (PL_SRPTI) 1756 1ST VOB_ID IN VOB SEQ. OR 1ST PLAY LIST SEARCH POINTER (PL_SRP#1) 1757 PLAY LIST 2ND VOB_ID IN VOB SEQ. SEARCH POINTER OR 2ND PLAY LIST SEARCH TABLE POINTER (PL_SRP#2) 1758 (PL_SRPT) VIDE0 nTH VOB ID IN VOB SEQ. MANAGER INFO. OR nTH PLAY LIST SEARCH MANAGEMENT POINTER (PL SRP#n) TABLE (VMGI_MAT) RTR VIDEO MANAGER VTSI 1106 INFO. (RTR_VMGI) <u>6</u> (RTR_VMGI) MOVIE AV FILE INFO. (RTR. VTS GENERAL TABLE (M_AVFIT) INFO. 1751 STILL PICTURE AV FILE RTR_VMG **VOB SEQUENCE** INFO. TABLE (S_AVFIT) INFO. 1752 ORIGINAL PGC INFO. PTT INFO. (ORG_PGCI) DATA 1753 USER DEFINED PGC NAVIGATION VTS TIME MAP INFO. TABLE (UD_PGCIT) **TABLE 1754** TEXT DATA MANAGER (TXTDT_MG) MANUFACTURER'S INFO. TABLE (MNFIT)

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 9 of 44







-16.12

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 13 of 44

	DETAILED INFORMATION CONTENTS 2021
CLASSIFICATION IIEM 2020	DATA SIZE OF ONE LINK INFORMATION (TOTAL OF ALL PIECES OF
LINK INFORMATION SIZE 2022	INFORMATION WHICH FOLLOW) (INDICATED BY NUMBER OF SECTORS
	USED (INTEGER MULTIFLE OF 2,040 DITEC//
INFNTIFICATION INFORMATION	ID INFORMATION OR LINK INFORMATION 2031
OF LINK INFORMATION 2023	NUMBER OF LINK INFORMATION
CF CN	שבו משר
INFORMATION PERIAINING TO	; —
DRIVE MANUFACIONER 2024	(1D OF GROUP FORMED BY A PLURALITY OF MANUFACIUMENS)
	OF DRIVE MANUFACTURER GROUP THAT CAN USE SPECIFIC
	DRIVE MANUFACTURER ID INFORMATION (DRIVE MANUFACIUMEN NAME
	OR THE LIKE) OF DRIVE MANUFACTURER THAT CAN USE SPECIFIC
	g
	TIME INFORMATION (SETTING DATE OF DRIVE MANUFACTURER ID OF
	THE LIKE) PERTAINING TO DRIVE MANUFACTURER THAT CAN USE
	INTURMALION
	ADDITIONAL INFORMATION PERTAINING TO THIS LINK
	JAEN STOLL
	FINCTION INFORMATION (CATEGORY ID) WHICH PERTAINS TO SPECIFIC 2040
FUNCTION INFORMATION 2025	•
	INFORMATION PERTAINING TO LINK PATTERN OF SPECIFIC
	ACT OLL

FIG. 13/

OF NOTITED 2020	DETAILED INFORMATION CONTENTS 2021	
CLASSIFICATION TIEM 2020	SOUTH AND THE AND THE PROPERTY ON INFORMATION FOR	
FUNCTION INFORMATION 2025	CORRECTION CONTENT AUTOMATIC INSPECTION IN CHARGING CONTENTS OF SPECIFIC	
	INFORMATION THAT CAN BE USED BY ONLY SPECIFIC	
	MANUFACTURER IN ACCORDANCE WITH CHANGE IN CONTENTS OF	
	COMMON INFORMATION COMPLYING WITH STANDARDS	2042
	NIMBER OF LINK DESIGNATION LOCATIONS IN	
LINK DESIGNATION	COMMON INFORMATION COMPLYING WITH STANDARDS	2044
LOCATIONS OF LINK SOURCE	TINE TO SELECT THE DESIGNATION INFORMATION	
AND LINK DESTINATION,	FIRST FRIGHT FINE COURT VING WITH STANDARDS	2045
LINK DESIGNATION RANGE,	IN COMMON INTOTAKALION COMILICATION CONTRACTOR AND	
AND DELOGITY ORDER	FIRST PRIORITY LINK DESIGNATION LOCATION INFURMATION	
AND TRIONILL OIDER	IN COMMON INFORMATION COMPLYING WITH STANDARDS	2040
INFORMALION 2020	SECOND BRIDBITY LINK DESIGNATION LOCATION INFORMATION	
	SECOND THIS THE STANDARDS	2047
	OFFICE OF THE PERSONATION INFORMATION	
	SECOND PRIORITI LINA DESIGNATION ESCONTION SECOND	2048
	IN COMMON INFORMATION COMPLITING WITH STANDARD	
	MINIMER OF LINK DESIGNATION LOCATIONS IN SPECIFIC INFORMATION	,
	THAT CAN BE LISED BY ONLY SPECIFIC MANUFACTURER	2054
	THE CAN DE CENTER OF THE CONTRACTION I OCATION	
	FIRST PRICALLI CLINA DESIGNATION ESC.	2055
	INFORMATION IN SPECIFIC INFORMALION	
	FIRST PRIORITY LINK DESIGNATION LOCATION	0
	INFORMATION IN SPECIFIC INFORMATION	ocn7

F16. 13E

CLASSIFICATION ITEM 2020	DETAILED INFORMATION CONTENTS 2021	
LINK DESIGNATION	SECOND PRIORITY LINK DESIGNATION LOCATION	2057
LOCATIONS OF LINK SOUNCE	INFORMALION IN SPECIFIC INFORMALION	
I INK DESIGNATION RANGE.	SECOND PRIORITY LINK DESIGNATION LOCALION	2058
AND PRIORITY ORDER	STATE OF THE OFFICE AND STATE	
INFORMATION 2026		
	LAST RECORDING/CHANGE TIME (DATE)	,
TIME INFORMATION	INFORMATION OF THIS LINK INFORMATION	1907
PERTAINING TO THIS LINK	FFFECTIVE PERIOD INFORMATION OF THIS LINK	0
INFORMALION 2027	INFORMATION (DUE DATE OF LINK INFORMATION)	7907
	TIME INFORMATION PERTAINING TO SPECIFIC	<u>.</u>
	INFORMATION (TIME BAND INFORMATION IN WHICH	
	SPECIFIC INFORMATION CAN BE USED OR THE LIKE)	2003
	ISABI F/UNUSABLE DETERMINATION FLAG FOR SPECIFIC INFORMATION	2071
SPECIFIC INFORMATION	DASCEMBED INFORMATION FOR SETTING SECURITY	2072
USABLE CONDITION	MODEL INFORMATION THAT CAN USE SPECIFIC INFORMATION	
INFURMALION 2020	(A) DEST MODEL THAT CAN USE SPECIFIC INFORMATION)	2073
	INFORMATION PERTAINING TO USABLE CONDITION FOR SPECIFIC	
	INFORMATION (USER RANGE DESIGNATION THAT ALLOWS USE OF	1
	SPECIFIC INFORMATION OR THE LIKE)	20/4
	SPACE INFORMATION PERTAINING TO USE CONDITION OF	200
	SPECIFIC INFORMATION (USABLE REGION OR THE LIKE)	5/0/2

FIG. 13(

EFFECT OF EMBODIMENTS 2085	- 1D DUPLICATION AMONG DIFFERENT DRIVE MANUFACTURERS CAN BE AVOIDED -THE NUMBER OF DIGITS REQUIRED FOR 1D INFORMATION CAN BE MINIMIZED NO 1D INFORMATION WANAGEMENT ORGANIZATION IN UNITS OF DRIVE MANUFACTURERS IS REQUIRED - 1D INFORMATION CAN BE ARBITRARILY SET
DETAILED CONTENTS OF EMBODIMENTS 2084	CALLY MANAGE (DVD FORUM OR THE LIKE) ASSIGN ID DRIVE INFORMATION TO EACH ORGANIZATION BY THIRD PARTY COMMON ORGANIZATION NO MANAGEMENT BY NO MANAGEMENT BY ORGANIZATION DETERMINE INFORMATION OF UNSUPPORTED MANUFACTURER WHEN SPECIFIC INFORMATION CANNOT BE READ
VAR1OUS EMBODIMENTS 2083	CALLY MANAGE ATION IN DRIVE RERS BY ORGANIZATION ON BY EACH UFACTURER
ATTRIBUTE OF 1D INFORMATION	2082 ORIGINAL ID INFORMATION (1/0 INFORMATION) 2095
NUMBER OF ATTRIE PIECES OF ID OF ID INFORMATION INFORM	2091 2091

FIG. 14A

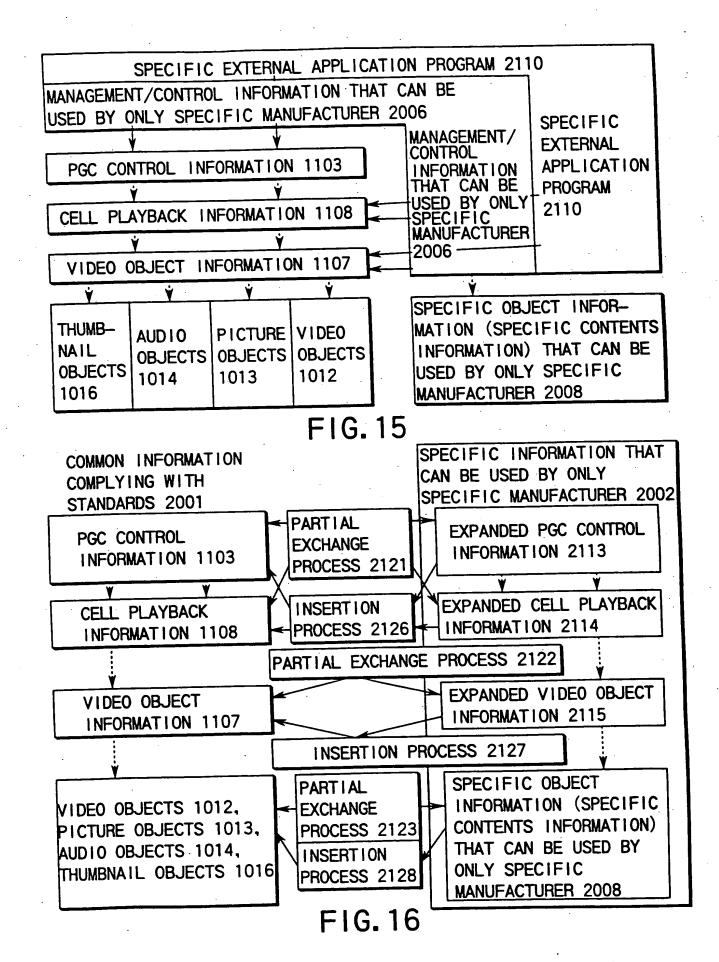
	1						Т			111				\top							7
EFFECT OF EMBODIMENTS 2085		DRIVE MANUFACIUMER ID	INFORMATION CAN BE	EASILY SET	· ID DUPLICATION AMONG	DIFFERENT DRIVE	MANUFACTURERS HARDLY OCCURS	NO CHARACTER CODE NEED BE		REGISTERED MANUFACTURER NAME	CAN BE DETECTED	INFORMATION SIZE IN LINK	INFORMATION CAN BE MINIMIZED		-LINK INFORMATION CAN BE	FLEXIBLY SET UP IN UNITS OF	DRIVE MODELS	A PLURALITY OF PIECES OF ID	INFORMATION CAN BE ASSIGNED		
DETAILED CONTENTS OF FURDINENTS 2084		DESCRIBE	MANUFACTURER NAME	USING CHARACTER	CODE 2034 (JIS CODE	OR THE LIKE) SET IN	LINK INFORMATION	REGISTER MANUFACTURER	NAME IN LIST TABLE	SET AT DIFFERENT	POSITION IN UNITS OF	DISCS, AND DESIGNATE	THE REGISTERED NUMBER	IN LINK INFORMATION	DETERMINE BASED ON	DRIVE MODEL NUMBER	THAT ONLY	MANUFACTURER WHICH	SELLS THAT MODEL CAN	USE SPECIFIC	INFORMATION
VARIOUS EMBODIMENTS	5007	DIRECTLY DESCRIBE	DRIVE MANUFACTURER	NAME IN INK	INFORMATION			DESIGNATE CORRE-	SPONDING NIMBER FROM NAME IN LIST TABLE	DRIVE MANUFACTURER	I IST TABLE	(DESCRIBED BY	CHARACTER	I NEORWATION)	DESCRIBE IN	CHARACTER	INFORMATION DRIVE	MODEL NUMBER FOR			
ATTRIBUTE OF ID INFORMATION	2082	CHARACTER	INFORMATION IDRIVE M	2006																	
NUMBER OF ATTRIE PIECES OF ID INFORMATION INFORM	2081	INDEPENDENT	INFORMATION	2001	1607																

FIG. 14B

		1
EFFECT OF EMBODIMENTS 2085	• ID DUPLICATION AMONG DIFFERENT DRIVE MANUFACTURERS CAN BE AVOIDED • UNSUPPORTED MANUFACTURER RECOGNITION ERROR RETE CAN BE GREATLY REDUCED BY COMBINING TWO PIECES OF INFORMATION	
DETAILED CONTENTS OF EMBODIMENTS 2084	DETERMINE MANUFACTURER THAT CAN USE SPECIFIC INFORMATION FROM TIME INFORMATION IN BCD FORMAT AND DRIVE MANUFACTURER ID INFORMATION DETERMINE MANUFACTURER THAT CAN USE SPECIFIC INFORMATION FROM ADDITIONAL INFORMATION FROM ADDITIONAL INFORMATION FROM PASSWORD AND DRIVE MANUFACTURER ID AND DRIVE MANUFACTURER ID	
VARIOUS EMBODIMENTS 2083	(BCD D36 WHEN JFACTURER AT ION IS HER ON 2037 IVE RER RER ON 2072 ON 2072 ING ING	
ATTRIBUTE OF ID INFORMATION	2082 INFORMATION COMBINED WITH TIME INFORMATION 2097 COMBINED WITH ADDITIONAL INFORMATION 2098 INFORMATION COMBINED WITH ADDITIONAL INFORMATION 2098 INFORMATION COMBINED WITH PASSWORD	}
NUMBER OF ATTRIE	COMBINE COMBINE INDEPENDENT INFORMATION WITH IN RIGHT COLUMN 2092	

FIG. 140

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 19 of 44



OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 20 of 44

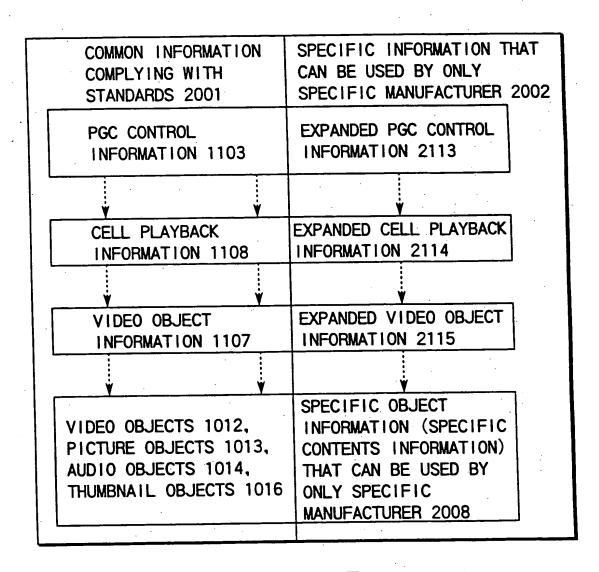


FIG. 17

					-	
THIRD PARTY INFORMATION THAT CAN BE COMMONLY USED 2134	COMPANIES B AND C	COMPANIES B AND C	COMPANY D	COMPANY B	COMPANY C	COMPANY A ONLY
RELEVANT OBJECT MANAGEMENT/CONTROL INFORMATION COMPLYING CONTENT RANGE WITH STANDARDS OF LINKED OBJECTS 2133	PGC_info. 1103 PGC_info. 1107	ALL PIECES OF MANAGEMENT/ CONTROL INFORMATION	ALL PIECES OF MANAGEMENT/ CONTROL INFORMATION	VOB_info. 1107 0BJECT 2007	Cell_info. 1108	Cell_info. 1108
RELEVANT OBJECT INFORMATION CONTENT RANGE 2132	ALL	ALL	ALL	PTT 1408	ALL	ALL
OUTLINE OF FUNCTION CONTENTS 2131	SYSTEMATICALLY MANAGE INFORMATION RECORDED IN RECORDING MULTILAYERS	VIDEO RECORDING USING PROGRAM RESERVATION INFORMATION	SEARCH PROCESS USING QURRY INFORMATION	PLAY BACK/DISPLAY VIDEO/STILL PICTURE INFORMATION RECORDED IN DIFFERENT FORMAT	VARIABLE SPEED PLAYBACK PROCESS	SIMULTANEOUSLY PLAY BACK/DISPLAY AFTER- RECORDED INFORMATION
LINK PATTERN 2041	A	∢	⋖	æ	В	8
CATEGORY PATTEID 2040	-	2	က	4	ഹ	9

FIG. 18A

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 22 of 44

CATEGORY PATTERN 2041	LINK PATTERN 2041	OUTLINE OF FUNCTION CONTENTS 2131	RELEVANT OBJECT INFORMATION CONTENT RANGE 2132	RELEVANT OBJECT MANAGEMENT/CONTROL INFORMATION INFORMATION COMPLYING CONTENT RANGE WITH STANDARDS OF LINKED OBJECTS 2133	THIRD PARTY INFORMATION THAT CAN BE COMMONLY USED 2134
7	В	DISPLAY/OUTPUT SPECIAL EDIT VIDEO	PTT 1408	Cell_info. 1108	COMPANY B
&	၁	CM/COMMENT AUTOMATIC	PTT 1407	Cell_info. 1108	COMPANIES C AND D
6	Q	ADD SECURITY FUNCTION	PTT 1407	V0B_info. 1107	COMPANY A ONLY
10	O	SIMULTANEOUS DISPLAY OF SWALL WINDOW	PTT 1407	Cell_info. 1108	COMPANY A ONLY
=	ò	SET IMAGE QUALITY IMPROVING PARAMETER	ALL	V0B_info. 1107	COMPANY D
12	0	SET USER RECORDING/ PLAYBACK LOCATION	ALL	Cell_info. 1108	COMPANIES B AND C

FIG. 18B

(B) INE			CELL PLAYBACK INFORMATION #B 2163 DATE/ TIME INFORMATION 2154 VIDEO OBJECT INFORMATION #2 2168 DATE/ LAST CREATION/CHANGE DATE/ LAST CREATION/CHANGE DATE/ THE INFORMATION #2 2168	163 DATE/ 168 DATE/	CELL PLAYBACK INFORMATION #C 2164 LAST CREATION/CHANGE DATE/ TIME INFORMATION 2155 VIDEO OBJECT INFORMATION #3 2169 LAST CREATION/CHANGE DATE/	K #C 2164 A HANGE DATE/ N 2155 #3 2169 HANGE DATE/ N 2159
LAST	FORMATION #A 2162 REATION/CHANGE DATE NFORMATION 2153 DEO OBJECT FORMATION #1 2167 REATION/CHANGE DATE		EATION/CHANGE EATION/CHANGE FORMATION 215 CATION/CHANGE	163 DATE/ 14 168 DATE/	INFORMATION/C LAST CREATION/C TIME INFORMATIO VIDEO OBJECT INFORMATION LAST CREATION/C	#C 2164 A HANGE DATE/ N 2155 #3 2169 HANGE DATE/ N 2159
TIME	NFORMATION 2153 NFORMATION 2153 DEO OBJECT FORMATION #1 2167 REATION/CHANGE DATE	-	FORMATION 215 FORMATION 215 FORMATION #2 2 EATION CHANGE	DATE/	LAST CREATION/C TIME INFORMATIO VIDEO OBJECT INFORMATION LAST CREATION/C	HANGE DATE/ N 2155 #3 2169 HANGE DATE/ N 2159
LAST	DEO OBJECT FORMATION #1 2167 REATION/CHANGE DATE	,	ED OBJECT DRMATION #2 2 EATION/CHANGE	168 DATE/	VIDEO OBJECT INFORMATION LAST CREATION/C	#3 2169 HANGE DATE/ N 2159
LAST	DEO OBJECT FORMATION #1 2167 REATION/CHANGE DATE		EATION #2 2	168 DATE/	INFORMATION LAST CREATION/C	#3 2169 HANGE DATE/ N 2159
LAST	REATION/CHANGE DATE		EATION/CHANGE	DATE/	LAST CREATION/C	HANGE DATE/ IN 2159
	CIZ NOTEMATION 213/	/ TIME IN	LIDMAN UN CID	8 11 1	TIME INFORMATION 2159	
_						
LINK INF	DRMATION LINK	ORMATION	LINK INFORMATION $\# \gamma$ 2165		ORMATION	LINK INFORMATIO
LINK (E) INFORMATION SIZE 2022	LINK IDENTI- FICATION INFORMATION	DRIVE MANUFACTURER INFORMATION 2025		LINK DESTINATION/SOURCE INFORMATION 2027 2026	DN/ TIME INFORMATION 2027	USEABLE CONDITION 2028
(F) LAST RE	LAST RECORDING TIME (DATE)	(DATE)				

(B) (B) (C) (C) (C) (DESIGNATION ARBITRARY LOCATION CAN BE DESIGNATED	(B) EDIT HISTORY INFORMATION 2141 (C) LATEST EDIT SECOND LATEST PROCESS 2144 EDIT PROCESS 2 PROCESS 2144 EDIT PROCESS 2 PROCESS 2144 EDIT PROCESS 2 ARBITRARY DIRECTLY INSERT INFORMATION INFOFMATION DESIGNATION OF INFOFMATION OF	EDIT DATE/TIME INFORMATION 0F SECOND LATEST SECOND LATEST SECOND LATEST SECOND LATEST OD 0F LOCATION - DIRECTION INFORMATION INFORMATION - DESCR HEAD INFORMATION - DESCR HEAD INFORMATION - DESCR HEAD INFORMATION - DESCR HEAD - DESIG	EDIT CONTROL INF FORMATION 2141 DATE/TIME INFORMATION OF INFORM SECOND LATEST EDIT PROCESS 2145 PROCESS EDIT PROCESS 2145 PROCESS CATION INFORMATION 2001 INFORMATION 2001 INFORMATION 2001 INFORMATION 2001 INFORMATION OF INFORMATION TO A WITH OTHER COMMO- DESIGNATE ID (OR	EDIT CONTROL INFORMATION 1023 4 2141	INFORMATION PERTAINING TO DETAILED EDIT HISTORY CONTENTS 2149 HISTORY CONTENTS 2149 FEFECTS (MERITS) OF RESPECTIVE EMBODIMENTS OARBITRARY LOCATION AND RANGE IN COMMON INFORMATION 2001 CAN BE DESIGNATED CAN BE DESIGNATED SIZE IS SMALL, ENTIRE COMMON INFORMATION 2001 IS FREE FROM ANY LARGE INCREASE IN INFORMATION SIZE DUE TO INFORMATION INFORMATION INFORMATION INFORMATION
			CORRESPON	CORRESPONDING LINK INFORMATION	
			IN PUINIC	IN POINIER INTORMATION	

FIG. 21/

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 25 of 44

										-
EFFECTS (MERITS) OF RESPECTIVE EMBODIMENTS	ARBITRARY LOCATION AND RANGE IN COMMON INFORMATION 2001	CAN BE DESIGNATED	SINCE LINK INFORMATION CAN	BE DIMECILY PLATED BACK IN	COMMON INFORMALION 2001,	QUICK ACCESS TO 2002 IS	ACH EVED			
DESCRIPTION OF PRACTICAL METHOD	DIRECTLY INSERT "LINK	INFORMATION 2001	DESCRIBE TAG INFORMATION AND	POINTER SIZE INFORMATION AT	HEAD POSITION OF POINTER	INFORMATION TO AVOID CONFUSION	WITH OTHER COMMON INFORMATION	DISTRIBUTE INDIVIDUAL LINK	INFORMATION IN COMMON	INFORMATION 2001
DESIGNATION SETTING METHOD OF	DIRECTLY INSERT	"LINK INFORMATION"	INFORMATION	[8]						
DESIGNATION	ARBITRARY	LOCATION CAN RF	DESIGNATED							

FIG. 21B

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 26 of 44

NOTANE	DECIGNATION CETTING METHOD OF	DESCRIPTION OF	EFFECTS (MERITS) OF
OCATION OF	DESIGNATION LOCATION	PRACTICAL METHOD	RESPECTIVE EMBODIMENTS
3		· ASSURE DESCRIPTION COLUMN	-SINCE TAG INFORMATION AND
	COLUMN EDP	INDICATING ID (OR NUMBER) OF	SUBSEQUENT INFORMATION
AND BANGE	DESIGNATING	LINK INFORMATION AT	INSERTED IN COMMON
ARE I INITED	I INK INFORMATION	INFORMATION DESCRIPTION	INFORMATION 2001 NEED NOT BE
IN ADVANCE	IN COMMON	LOCATIONS PERTAINING TO	SKIPPED, READ ERROR IN
	INFORMATION	CORRESPONDING VOBS, CELLS,	COMMON INFORMATION 2001
VOB Info	[2]	PGCs IN VIDEO OBJECT	HARDLY OCCURS IN INFORMATION
Call Info		INFORMATION 1107, PGC CONTROL	PLAYBACK APPARATUS WHICH
PGC Info		INFORMATION 1103, AND CELL	DOES NOT USE LINK INFORMATION
AND THE		PLAYBACK INFORMATION 1108	
!		-COLUMN HAS NO ENTRY IF LINK	
		INFORMATION IS NOT DESIGNATED	

FIG. 210

																				_
EFFECTS (MERITS) OF RESPECTIVE EMBODIMENTS	SINCE TAG INFORMATION AND	SUBSEQUENT INFORMATION	INSERTED IN COMMON	INFORMATION 2001 NEED NOT BE	SKIPPED, READ ERROR IN COMMON	INFORMATION 2001 HARDLY	OCCURS IN INFORMATION	PLAYBACK APPARATUS WHICH DOES	NOT USE LINK INFORMATION	INFORMATION SIZE IN COMMON	INFORMATION 2001 CAN BE	MINIMIZED	· INFLUENCE ON INFORMATION	PLAYBACK APPARATUS	THAT DOES NOT USE LINK	INFORMATION IS MINIMUM				
DESCRIPTION OF PRACTICAL METHOD	· CORRESPONDING DESIGNATION	LOCATION AND DESIGNATION RANGE	INFORMATION IN COMMON	INFORMATION 2001 COMPLYING	WITH STANDARDS ARE DESCRIBED	IN LINK INFORMATION 2003, AS	SHOWN IN FIG. 13	IN FIG. 13, BY DESIGNATING	PRIORITY ORDER, A PLURALITY OF	PARALLEL LINKS CAN BE	DESIGNATED FROM ONE LINK	INFORMATION TO A PLURALITY OF	LOCATIONS IN COMMON	INFORMATION 2001	THERE IS NO INFLUENCE ON	CONTENTS OF COMMON INFORMATION	2001 IRRESPECTIVE OF	PRESENCE/ABSENCE OF LINK	INFORMATION 2003 AND SPECIFIC	INFORMATION 2003
DESIGNATION SETTING METHOD OF DESIGNATION I OCATION	PROVIDE	INFORMATION OF		. —				TO I INK	INFORMATION	[0]										
DESIGNATION	DESIGNATION	LOCATION	AND RANGE	ARF I MITED	IN ADVANCE		VOB Info	Cell Info	PGC Info	AND THE	1 1 KF									

FIG. 21D

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 28 of 44

LINK INFORMATION ALLOCATION	DESCRIPTION OF DETAILED CONTENTS	RELATIONSHIP WITH METHOD OF SETTING DESIGNATION LOCATION IN COMMON INFORMATION (CORRESPONDING TO SYMBOLS IN FIG. 21)	EFFECTS (MERITS) OF RESPECTIVE EMBODIMENTS
IN COMMON INFORMATION 2001	ALLOCATE IN PORTION (E.G., IN EDIT CONTROL INFORMATION 1023 LIKE IN EMBODIMENT SHOWN IN FIG.19) OF COMMON INFORMATION 2001	A, B, C, D	WHEN USER ERRONEOUSLY ERASE COMMON INFORMATION 2001, SINCE LINK INFORMATION IS ERASED TOGETHER, INFORMATION PLAYBACK APPARATUS HARDLY CAUSES OPERATION ERROR

FIG. 22A

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 29 of 44

15	X NO
IS) OF 30D I MEN	NEOUSL' C C INCE L ERASEI PRMATIOI MATUS OPERAT
(MERIT	HEN USER ERRONEOUSLY RASES SPECIFIC NFORMATION, SINCE LII NFORMATION IS ERASED TOGETHER, INFORMATION LAYBACK APPARATUS JARDLY CAUSES OPERATION ERROR
EFFECTS (MERITS) OF RESPECTIVE EMBODIMENTS	WHEN USER ERRONEOUSLY ERASES SPECIFIC INFORMATION, SINCE LINK INFORMATION IS ERASED TOGETHER, INFORMATION PLAYBACK APPARATUS HARDLY CAUSES OPERATION ERROR
RELATIONSHIP WITH METHOD OF SETTING DESIGNATION LOCATION IN COMMON INFORMATION (CORRESPONDING TO SYMBOLS IN FIG. 21)	A, C, D
DESCRIPTION OF DETAILED CONTENTS	ALLOCATE IN PORTION OF SPECIFIC INFORMATION 2002 TOGETHER
LINK INFORMATION ALLOCATION	IN SPECIFIC INFORMATION 2002

F1G. 22B

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 30 of 44

EFFECTS (MERITS) OF RESPECTIVE EMBODIMENTS	LINK INFORMATION IS	OF MANUFACTURERS
RELATIONSHIP WITH METHOD OF SETTING DESIGNATION LOCATION IN COMMON INFORMATION (CORRESPONDING TO SYMBOLS IN FIG. 21)		A, C,
DESCRIPTION OF DETAILED CONTENTS	ALLOCATE ALL PIECES OF LINK INFORMATION AT ONE LOCATION TOGETHER	ALLOCATE LINK INFORMATION USED IN UNITS OF DRIVE MANUFACTURERS TOGETHER
LINK INFORMATION ALLOCATION	ALLOCATE AT ORIGINAL LOCATION	COMMON INFORMATION 2001 AND SPECIFIC INFORMATION 2002)

FIG. 220

OBLON, SPIVAK, et al.
Docket No: 249617US2SDIV
Inv: Hideo ANDO, et al.
SHEET 31 of 44

ROOT DIRECTORY 1450 SUB DIRECTORY 1451 REWRITABLE TITLE SET RW_VTS 1452 (DVD_RTR_DIRECTORY) RTR=REAL TIME RECORDING DATA FILES 1453 CONTROL INFORMATION 1011 =RW VIDEO_CONTROL. IFO (RTR. IFO) BACKUP OF CONTROL INFO. =RW_VIDEO_CONTROL.BUP AV FILE 1401 (RTR DATA) =RW_OBJECT.OB VIDEO OBJECT (RTR MOV. VRO) 1012 PICTURE OBJECT (RTR_STO. VRO) 1013 AUDIO OBJECT (RTR STA. VRO) 1014 THUMBNAIL OBJECT 1016 LINK INFORMATION FILE 2171 =RW LINK.DAT (ONE KIND OF REWRITABLE ADDITIONAL INFO. 1454) DIRECTORY FOR SPECIFIC INFORMATION OF COMPANY A 2173 =RWADD-A SPECIFIC MANAGEMENT/CONTROL INFORMATION DEDICATED TO COMPANY A 2176 =RW-A-CONTROL. IFO SPECIFIC OBJECT INFORMATION DEDICATED TO COMPANY A 2177 =RW-A-OBJECT. VOB DIRECTORY FOR SPECIFIC INFORMATION OF COMPANY B 2174 FIG. 23 =RWADD-B

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 32 of 44

ROOT DIRECTORY 1450

SUB DIRECTORY 1451

REWRITABLE TITLE SET RW_VTS 1452 (DVD_RTR DIRECTORY)

RTR=REAL TIME RECORDING

DATA FILES 1453

CONTROL INFORMATION 1011 = RW_VIDEO_CONTROL.IFO (RTR.IFO)

BACKUP OF CONTROL INFO. =RW_VIDEO_CONTROL.BUP

AV FILE 1401 (RTR DATA) =RW_OBJECT.OB

VIDEO OBJECT (RTR_MOV. VRO) 1012

PICTURE OBJECT (RTR_STO.VRO) 1013

AUDIO OBJECT (RTR_STA. VRO) 1014

THUMBNAIL OBJECT 1016

COMMON FILE FOR RECORDING SPECIFIC INFORMATION 2181
=RW_ADD.DAT (ONE KIND OF REWRITABLE ADDITIONAL INFO. 1454)

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 33 of 44

ROOT DIRECTORY 1450 SUB DIRECTORY 1451 REWRITABLE TITLE SET RW_VTS 1452 (DVD_RTR DIRECTORY) RTR=REAL TIME RECORDING DATA FILES 1453 CONTROL INFORMATION 1011 =RW_VIDEO_CONTROL.IFO (RTR.IFO) BACKUP OF CONTROL INFO. =RW_VIDEO_CONTROL.BUP AV FILE 1401 (RTR DATA) =RW_OBJECT.OB VIDEO OBJECT (RTR_MOV. VRO) 1012 PICTURE OBJECT (RTR_STO.VRO) 1013 AUDIO OBJECT (RTR_STA. VRO) 1014 THUMBNAIL OBJECT 1016 SUB-DIRECTORY DEDICATED TO COMPANY A 2185 LINK INFORMATION DEDICATED TO COMPANY A 2191 MANAGEMENT/CONTROL INFORMATION OF SPECIFIC INFORMATION DEDICATED TO COMPANY A 2192 SPECIFIC OBJECT INFORMATION DEDICATED TO COMPANY A 2193 SUB-DIRECTORY DEDICATED TO COMPANY B 2186

FIG. 25

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 34 of 44

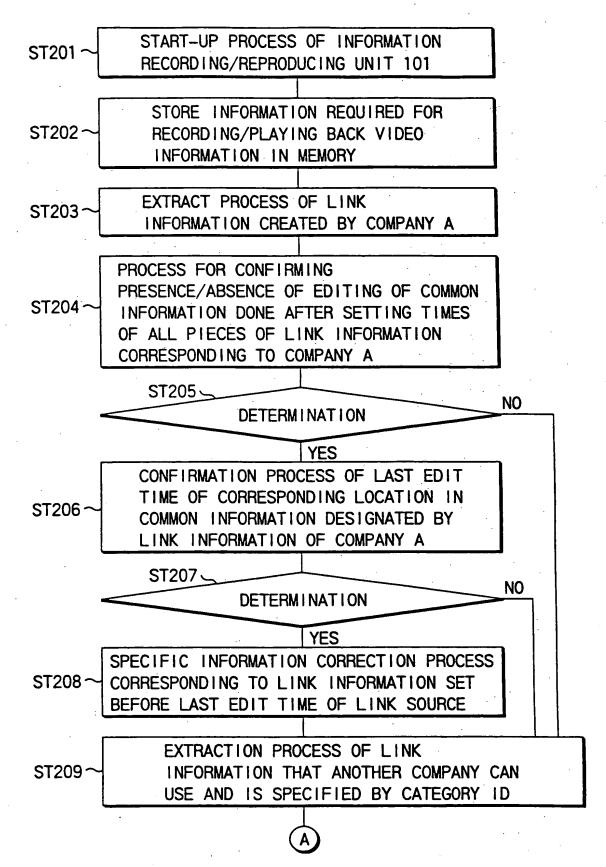


FIG. 26A

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 35 of 44

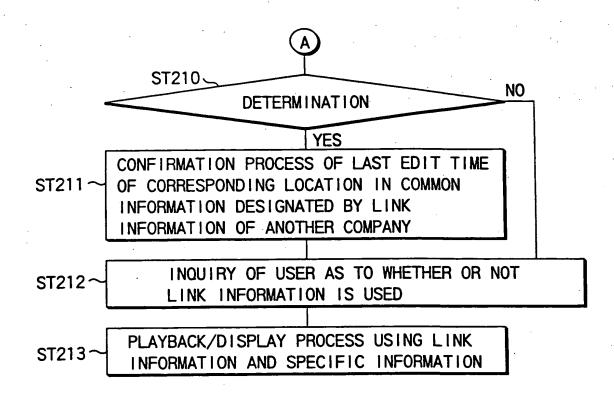


FIG. 26B

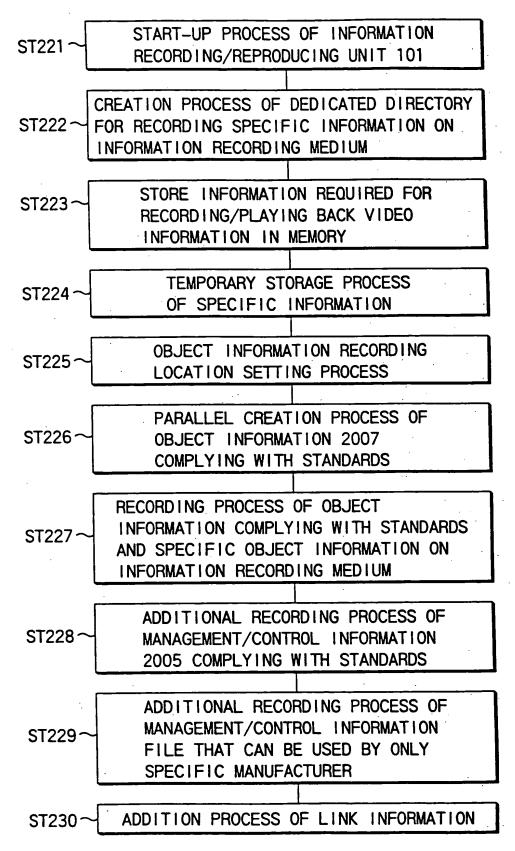


FIG. 27

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 37 of 44

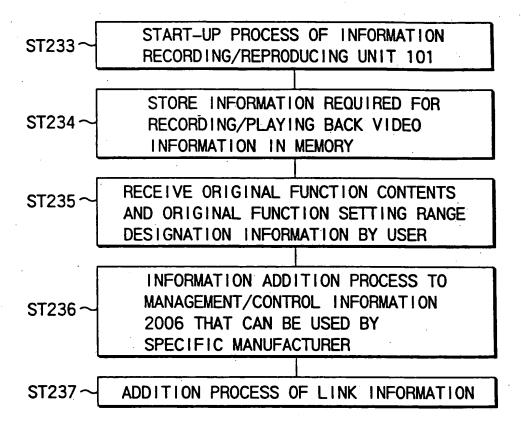


FIG. 28

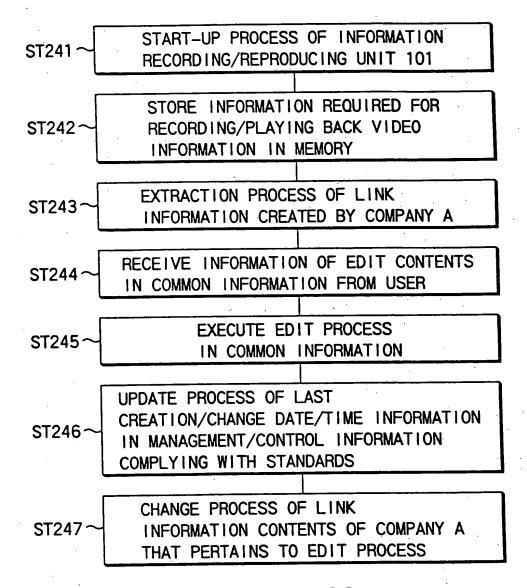


FIG. 29

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 39 of 44

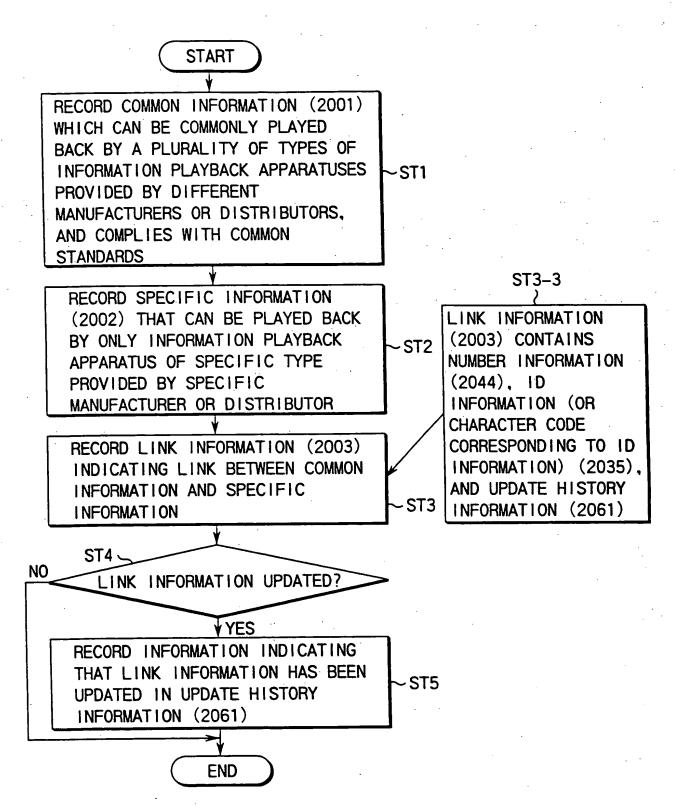
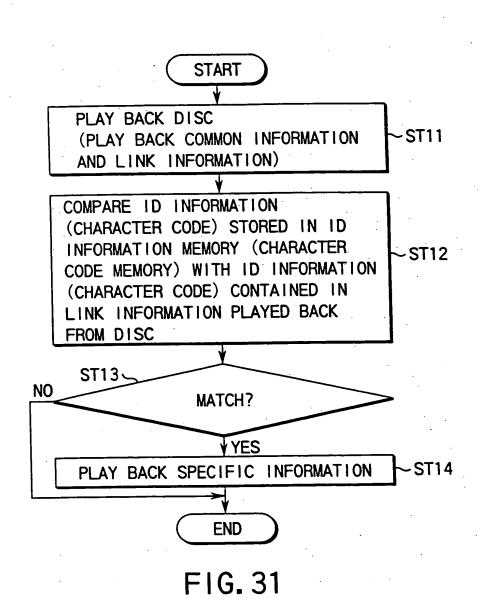
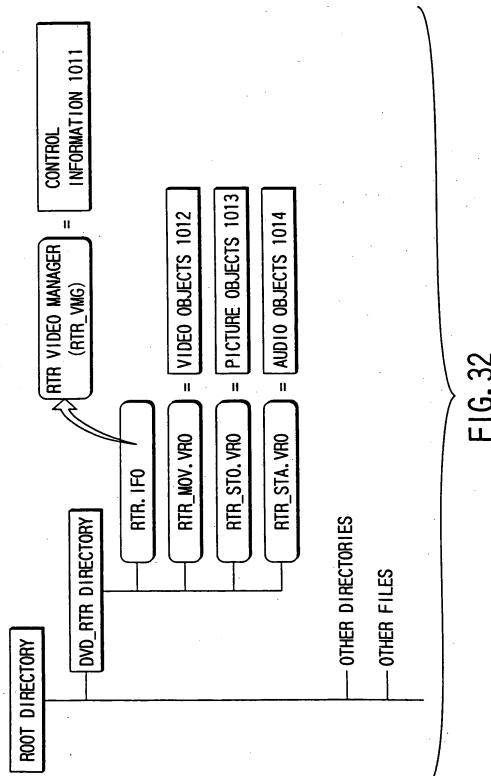


FIG. 30

OBLON, SPIVAK, et al. Docket No: 249617US2SDIV Inv: Hideo ANDO, et al. SHEET 40 of 44





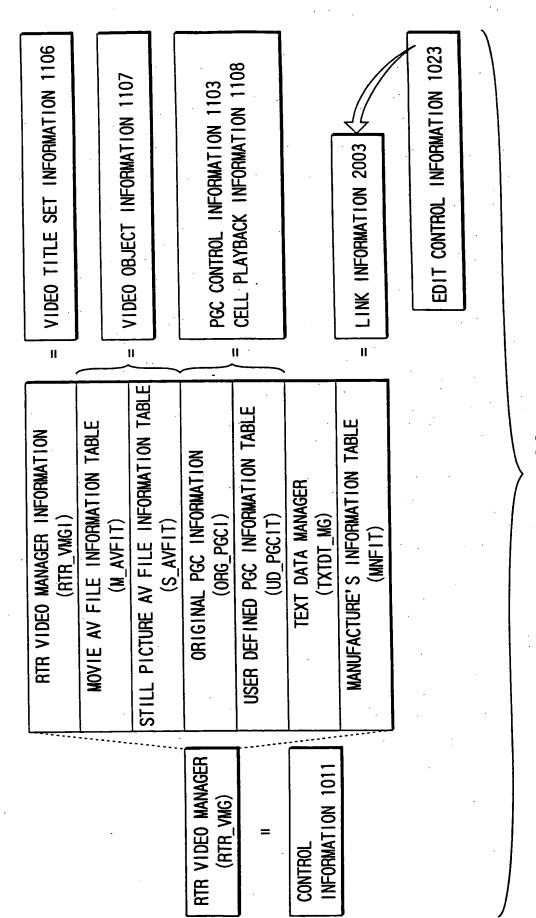


FIG. 33

					NUMBER OF LINK		III COMMON IIILOUM	STANDARDS 2044					
						NUMBER OF MANUFACTURER'S	TION	MANUFACTURER'S INFORMATION #1	(MNFI #1)			MANUFACTURER'S INFORMATION #n	(MNFI #n)
				3LE		NUMBER	INFORMATION	••••	•			MANUFACTU	
RTR VIDEO MANAGER INFORMATION	(RTR_VMGI)	MOVIE AV FILE INFORMATION TABLE	(M_AVFIT)	STILL PICTURE AV FILE INFORMATION TABLE	(S_AVFIT)	ORIGINAL PGC INFORMATION	(ORG_PGCI)	USER DEFINED PGC INFORMATION TABLE	(UD_PGCIT)	TEXT DATA MANAGER	(TXTDT_MG)	MANUFACTURE'S INFORMATION TABLE	(MNFIT)

(RTR_VMG)

FIG. 34

HB G	FIFID NAME	CONTENTS	NUMBER OF BYTES	
				DRIVE MANIFACTURER
0 TO 31 MNF_ID	MNF_ID	MANUFACTURER 1D	32 BYTES =	= ID INFORMATION 2035
		TIME WHEN THIS MINE!		LAST RECORDING/CHANGE TIME (DATE)
32 TO 36 REC_TM	REC_TM	WAS RECORDED	5 BYTES ==	INFORMATION OF LINK INFORMATION 20
- C	+	MANUFACTURER'S	VARIABLE LENGTH	
3/ 10 -		INFORMATION DATA	BYTES	
			37+VARIABLE	
TOTAL			LENGTH BYTES	

F16.3